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HOST ACCOUNTING AND ADMINISTRATIVE PROCEDURES

A plan must be formulated and agreed upon for the development of a Host accounting system in the ARPA Network. Such a plan should take into consideration both current Host accounting practices and new technical contributions. This document is an early attempt to identify the issues concerning Host accounting. It is being distributed as a working document on which further discussions may be based and, as such, does not represent, nor is intended to represent, a position on any of these issues.

The method of network operation and the potential for its growth are relevant factors to be considered in formulating a plan for Host accounting. For example, the answers to the following questions provide a useful background for reference:

1) Who or what operates the Network?

2) What is the criteria upon which new sites should be incorporated into the Network?

3) What regulations, if any, apply to the connection of non-ARPA sites?

4) What is the relation, if any, between the ARPA Network and common carrier services?

5) What procedures are required to bring new sites on board and up to speed?

6) What is the most effective way to characterize their resources?

7) What usage of other Network resources do they anticipate?

8) What procedures will be required for a typical user to obtain access to that Host?

9) What is their charging policy and for what items?

10) Are their rates in accordance with government standards?

ASSUMPTIONS REGARDING THE NETWORK

I have made several assumptions in this presentation that should simplify and, hopefully, clarify the framework in which the accounting issues reside. Any one of these assumptions may be subject to challenge.

A. Subnet Considerations

1) That some entity, government or private, will undertake to operate the subnet and will act as a cost center for the subnet.

2) That the total cost of operating the subnet (equipment, development, maintenance, service and other administrative costs) will be assumed by the cost center which will be reimbursed by the Host sites or directly by ARPA on both a connect and usage basis.

3) That the subnet will be initially operated as part of a private government-sponsored resource-sharing network for the use of its participants in obtaining computer services and not as a common carrier for the sale of communication services.

4) That both ARPA and non-ARPA supported contractors will eventually be allowed to connect. The use of the subnet may be administered to support resource-sharing activities.

B. Host Considerations

1) That each serving Host will make arrangements for use of its facilities and arrange to obtain payment either from its own ARPA contract, directly from the using Host, or from the using Host via an intermediate mechanism.

2) That each prospective Host site will make available (in some way to be designated) figures on cost of usage for relevant facilities such as cpu, storage, connect time, peripherals, etc. It will further indicate, where appropriate, the status of equipment (such as government-furnished, leased, or privately owned) and whether the rates are in accord with government standards.

3) That implementation of standard automated accounting procedures involving the use of the Network will be deferred until non-automated procedures have been understood and stabilized. Early experimentation in this area is appropriate, however.

4) That no major change in current Host accounting procedures should be required initially.

C. Both Host and Subnet Considerations

1) That two kinds of traffic into the Network will be measured by the network, namely traffic to Hosts at other sites and traffic to Hosts at the same site.

2) The Network cost center will record traffic out of each Host but will not initially keep records of traffic on a Host/Host basis or on a link or socket basis. Each Host will be responsible for distributing the cost of Network usage among the appropriate users.

3) That some form of duplication, verification, or backup of accounting information may become desirable.

4) Understanding the relationship between service, improvement, reliability and cost should be the responsibility of the Network operator, but that feedback from the Host sites in this area is absolutely essential.

SUGGESTED TOPICS

The following set of topics are introduced for discussion among the network community.

A. Current Practices

1) What constitutes current Host accounting procedures? How is it accomplished and what is accounted for?

B. Administrative Procedures

1) What access arrangements for network users are either planned or envisioned at each site?

2) Are security or authenticity provisions required for network usage and if so, what is the nature of that requirement?

3) Should Host accounting and network accounting be completely independent of each other or not? If not, in what way should they be made interdependent?

4) What long range billing procedures are desirable?

C. Charging Policies

1) What procedures are required for a Host to determine the most cost effective way to run a job on the Network? In this regard, is it helpful to try to categorize resources for costing purposes?

2) Should some classes of Host activity be exempt from accounting?

3) Is it desirable to achieve standardized rates for specific classes of activity, and if so how should those rates be determined?

D. Technical Aspects

1) Should Host accounting information eventually flow via the Network? Should it be accessible to a user or a Host in real-time? If so, what should flow on-line?

2) What accounting mechanisms, if any, are needed to deal with events, from which recovery or continuation is not possible, that result from use of the Network and lack of proximity to the computer? To what extent are the procedures in current use for remote users from the dial-up network applicable?

3) For what classes of Host Network activity, if any, is conventional logging-in not a desirable long-range strategy?

This list of topics is not intended to be complete or even very specific. Suggestions for additional topics are not only welcomed but encouraged.